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Motivations and Constraints of Meat Avoidance

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Abstract: Reducing the consumption of meat can make a significant contribution to sustainable development. However, at least in Western societies with their already rather high levels of per-capita meat consumption, only a minority of consumers reduces meat intake by following a vegetarian or plant-based diet. To arrive at a differentiated understanding of the conditions of meat avoidance, we empirically assess the importance of a broad set of specific motivations and constraints previously discussed in the literature, including specific benefits, particular constraints, social norms, and a vegetarian self-identity. The analysis is based on a random sample of students at the university of Zurich (Switzerland)—a social group exhibiting a rather high prevalence of plant-based diets and vegetarianism. Researching this young and educated population sheds light on the motivational underpinnings of consumer segments especially willing to reduce meat intake. Data were collected in November and December 2016. We found that a vegetarian self-identity, both injunctive and descriptive social norms, and convenience are the most important direct determinants of meat avoidance among this young and highly educated consumer segment. Furthermore, the results suggest that a vegetarian self-identity mediates the effects of ethical, health-related, and environmental benefits, taste as a constraint and partially the injunctive norm. Pecuniary costs of a vegetarian diet are not significantly correlated with meat avoidance.

Keywords: vegetarianism; plant-based diet; meat consumption; rational choice; benefits; restrictions; opportunities; social norms; vegetarian self-identity

1. Introduction

In recent decades, there has been an increasing awareness of the potential benefits for sustainability implied by reducing the consumption of meat. Meat avoidance includes, on the one hand, a strict vegetarian diet, whereby consumers completely renounce consuming red meat, poultry, and fish. On the other hand, it also includes so-called "plant-based" diets, which are defined as containing mainly non-meat food. Hence, in contrast to a strict vegetarian diet, a plant-based diet does not preclude the occasional consumption of meat, but only permits it in limited amounts [1,2]. Potential benefits of vegetarianism and plant-based diets are linked to ethical, environmental, and health-related issues. Considering ethics, the utilitarian philosopher Peter Singer [3] provided an influential critique of factory farming in the late 1970s, arguing that the interest of humans in eating meat does not justify the suffering of animals caused by miserable living conditions. A vegetarian or plant-based diet bears the potential of eliminating the need for factory farming, thereby improving animal welfare. In regard to the environment, the FAO [4] concludes that livestock (including meat production) is responsible for a substantial amount of global greenhouse gas emissions—more than transport. Using life cycle analysis, Martin and Brandão [5] compared the effects of dietary choices on a range of environmental impact categories. They found that a vegetarian diet and meat reduction are the best strategies for reducing

CO_2-emissions, acidification, land use, and biodiversity damage. Finally, several authors claim that (well-balanced) vegetarian and plant-based diets are healthier than their meat-based counterpart [6,7] due to lower intakes of saturated fat and cholesterol and higher amounts of antioxidants [8]. Previous research provided evidence that the consumption of red and processed meat contributes significantly to different types of cancer [9]. In a large-scale meta-analysis, however, Micha et al. [10] could not confirm that the intake of unprocessed red meat is associated with coronary heart disease or diabetes. While this issue therefore remains controversial, previous studies nevertheless found some evidence for the health benefits of a meat-reduced diet. Moreover there is a widespread belief that plant-based and vegetarian diets are healthier [11].

It would therefore seem to be a clear-cut case: reduce the intake of meat and act sustainably with regard to non-human animals, the environment and yourself. Nevertheless, at least in Western societies, consumption levels of meat are still high and the proportion of vegetarians is low. For example, the share of self-declared vegetarians (and vegans) in Switzerland in 2017 was around 8%, while it was estimated to be 9% in Germany (2016) and 5% in the United States (2018) [12–14]. It must be noted, however, that these numbers are likely to be overestimated since the everyday understanding of "vegetarianism" is ambiguous (see Section 3 for a discussion). As a case in point, only five years earlier in 2012, just 3% of the Swiss population were categorized as strict vegetarians based on actual meat consumption, 19% as consumers with reduced meat intake (two days per week or less) and 72% as meat eaters (at least five days per week) [15]. Taking into account that annual meat consumption per capita remained quite stable from 2012 to 2016 in Switzerland [16], it is likely that differences in measurement partially explain the different percentages of vegetarians in 2012 and 2017. (Unfortunately, more recent data on actual meat consumption are not available.) In any case, these numbers clearly show that consumers who follow a vegetarian or a plant-based diet are in the minority in Switzerland as well as in other Western countries. Furthermore, the increase of vegetarians and consumers following a plant-based diet in recent decades has been marginal at the very best [15,17].

The question thus arises: why do individuals adhere to a meat-based diet despite the potential benefits of meat avoidance? In line with wide rational choice theory [18], we argue that the choice to avoid meat consumption must be explained by simultaneously taking into account specific motivations as well as different constraints. Accordingly, the motivation to avoid meat based on the anticipation of ethical, environmental, and health-related benefits might be hindered or even eliminated due to a number of constraints.

Most of the previous research estimating the independent effects of motivations and constraints on meat consumption relied on the theory of planned behavior [19–24]. These studies explain intentions concerning meat intake by overall evaluation of behavior (attitude), perceived social norms (subjective norms), and the perception of facilitating or limiting conditions (perceived behavioral control) [25]. In line with this theory, these studies used composite measures of attitudes, subjective norms and perceived behavioral control. Therefore, they did not separate beliefs about ethical, environmental, and health-related benefits, particular constraints, such as taste or financial opportunities, and various types of social norms, which is a much more common empirical practice in the rational choice theory tradition compared to the theory of planned behavior.

Hence, we based our analysis on wide rational choice theory and investigated specific beliefs which motivate or constrain meat avoidance. We could thus identify distinct motivations to reduce meat consumption and their interrelationship. Studies interested in the independent effects of specific motivations and constraints are still scarce. Moreover, the available studies only analyze a subset of relevant explanatory variables [26–28] and/or are not directly concerned with meat avoidance (see [29] for fish consumption; [30] for meat substitutes). Additionally, while previous research acknowledges the importance of certain benefits and barriers for meat consumption, the role of self-identity has been largely neglected in quantitative research [19,23,31,32]. In regard to meat avoidance, a self-identity as a vegetarian seems especially relevant. However, to the best of our knowledge, this type of identity has hitherto remained unaddressed in quantitative studies on meat avoidance.

In sum, drawing on wide rational choice theory [18], we explain the intention to avoid meat (plant-based and vegetarian diets) by a broad set of specific motivations and constraints. This enabled us to differentiate between the more and less important determinants of reduced meat consumption. Moreover, analyzing particular constraints, norms and self-identity might help explain more precisely why individuals do not change their diet despite the potential ethical, environmental, and health-related benefits of meat avoidance. The empirical research was based on an online survey among a random sample of students of the University of Zurich, Switzerland. Thus, we studied a rather young and educated population segment in which the percentage of vegetarians and persons with reduced meat consumption is comparatively high. Since this is a kind of trend-setting consumer segment, it is important to study their motives and constraints in relation to meat avoidance. Our findings suggest that a vegetarian self-identity, mediating the effect of perceived ethical, environmental and health benefits as well as taste, is the strongest predictor of a meat-reduced diet. Furthermore, convenience and social norms shape meat consumption rather strongly. The pecuniary costs of a vegetarian diet are not significantly correlated with diet choice.

The article is organized as follows: we begin with a discussion of the theory (Section 2). We then turn to the data and methods (Section 3) before presenting the empirical results (Section 4) and discussing the findings in Section 5. In the final section, we summarize the key findings, acknowledge limitations, point out directions for future research, and present policy as well as managerial implications.

2. Theory

Despite rational choice theory (RCT) being one of the most widely used explanatory perspectives in the social sciences [33], it has rarely been applied to explain the reduction of meat consumption (for analyses along the lines of RCT, see [26–28]). This may be based on the fact that in research on ethical consumption and consumer research more generally, theories from social psychology, such as the theory of planned behavior (TPB), are much more widespread [34]. However, both theories rest on very similar assumptions and it is not our aim to argue for one approach over the other. Still, in the TPB tradition, beliefs about the consequences of a behavior are usually summed up into an overarching attitude, the subjective norm, and the perceived behavioral control. In the rational choice tradition, it is much more common to empirically differentiate motives for behavioral alternatives [35]. For example, instead of estimating the effect of the perceived behavioral control on intention or behavior, rational choice theory separates the underlying control beliefs, which are interpreted as constraints, and empirically assesses the relative influence of each belief separately [36]. Since our main aim was to explore the underlying motives for the reduction of meat consumption, we based our theoretical argument on rational choice theory.

In general, RCT rests on three propositions [18]. Firstly, the theory assumes that behavior is motivated by preferences for specific goals. Secondly, it is assumed that individuals face certain constraints when they pursue these goals. These constraints might decrease (in the case of restrictions) or increase (in the case of opportunities) the possibilities for the realization of desired goals. Basically, constraints have an impact on the perceived costs of the behavioral alternatives. Thirdly, the theory assumes that individuals choose between different alternatives according to a decision rule. Most often, rational choice theories propose that individuals choose those actions which best satisfy their goals (maximization rule), taking into account the constraints [18]. For example, according to RCT, individuals choose a meat-free meal if and only if the health-related benefit (motivation) outweighs the effort of finding an appropriate meat-free alternative (constraint) (cf. [37]). RCT therefore underscores that human action is simultaneously determined by motivations and constraints. Certain individuals might hold motivating beliefs about desirable goals of meat reduction. However, if the constraints do not contain possibilities to realize these goals, they do not translate into different dietary patterns (cf. [38]). Methodologically, this implies that the influence of motivations can only be estimated if one controls for constraints.

What particular motivations and constraints need to be considered for an explanation of meat avoidance? To develop an explanatory model including a broader set of constraints and motives, we systematize motivations and constraints previously discussed in the literature on the reduction of meat consumption and related research on ethical consumption.

Ethical, environmental, and health-related benefits: One of the most commonly reported motivations for pursuing a plant-based or a vegetarian diet is the concern for the welfare of nonhuman animals [39]. The majority of quantitative research confirms that ethical beliefs in terms of animal well-being predict the intention to reduce the intake of certain meats [26], the likelihood of pursuing a vegetarian or a plant-based diet [40–42], favorable attitudes towards vegetarianism [28], and a higher willingness to consume meat substitutes [30]. Secondly, previous research provides evidence for a positive correlation between environmental concern and different aspects of meat reduction. The belief that vegetarianism is beneficial to the environment [43] and the endorsement of biospheric values [31] are strong predictors of a vegetarian diet or the intention to reduce meat respectively. Furthermore, general environmental concern and high awareness of environmental problems increase the support for meat reduction intervention strategies [1,44]. Thirdly, health-related benefits emerge as another important aspect to choosing a vegetarian or plant-based diet [37,39]. Indeed, studies by Lea and Worsley [45] and Povey et al. [23] show that respondents rank health as the most important and most salient benefit of a vegetarian diet. Accordingly, several studies find that belief in health benefits has positive effects on the reduction of meat intake [26,27] or the adoption of a plant-based diet [2].

Taste, convenience, and pecuniary costs as constraints: Constraints are beliefs about the opportunities and restrictions linked to a certain behavior, akin to control beliefs in the TPB [25]. They point to circumstances which enable or impede the realization of particular goals. Hence, they are subjectively perceived as "barriers" or "costs" of a certain course of action. In several studies, respondents rated taste to be the strongest barrier to reduce meat consumption and to adopt a vegetarian diet [1,45]. Accordingly, Piazza et al. [46] counted the belief that meat is "nice"—that is, tasty and satisfying—as one of the main justifications for meat consumption by omnivores. However, conceptually, taste could also be treated as a motivation. Consumers might reduce the intake of meat because they like the taste of meat-free meals or they dislike the taste of meat. Hence, taste would be a benefit of a vegetarian diet. Instead of making an a priori argument, we resolved this conceptual problem empirically by considering whether consumers themselves categorize taste as a benefit or a constraint. A study by Lea and Worsley [45] is very instructive in this regard. They measured the agreement of respondents with a list of statements on benefits and barriers to a vegetarian diet. Out of 25 statements for barriers, taste ranked number one with 74% agreement. In stark contrast, taste as a benefit of a vegetarian diet ranked 20th out of 24 statements, with just 11% agreement. Hence, the vast majority of consumers perceives taste as a barrier and not as a benefit of a vegetarian diet [39,45]. Since rational choice theory analyzes the decisions of consumers based on their subjective perception of benefits and costs, it is theoretically more meaningful to categorize taste as a constraint. Choosing a meat-free diet entails opportunity costs for those who like the taste of meat (cf. [47]). Correlational studies confirm that the evaluation of the taste and the physical properties of meat is associated with dietary choices [21,26,27,29,46]. Secondly, research points out that convenience is a relevant constraint. Pursuing a vegetarian or a plant-based diet might be inconvenient because, on the one hand, the preparation of vegetarian or plant-based meals takes more time, information, knowledge, and therefore effort, especially in the first stages of a dietary change [1,37]. On the other hand, vegetarian or plant-based diets may reduce the available dishes to choose from [2,20,28]. Most of the previous research could confirm that diet choice is linked to subjectively rated convenience [2,20,27,28]. Finally, pecuniary costs might constrain meat avoidance. At first glance, one might expect the frequency of meat consumption to be positively correlated with financial opportunities since, in general, meat is costlier than many other groceries. However, maintaining varied and balanced plant-based or vegetarian diets requires purchasing high-quality vegetables and/or meat substitutes [6,7,30]. These diets therefore entail very specific pecuniary costs. The scarce studies on this type of constraint are conflicting. While Richardson

et al. [26] found that financial considerations (value for money) are associated with the intention to reduce meat, Leek et al. [29] could not confirm this result for fish consumption.

Injunctive and descriptive social norms: Social pressure, especially by other household members and friends, is generally seen as an important influence on meat consumption [39,45]. Two types of social norms can be distinguished: injunctive and descriptive [48]. Injunctive social norms represent beliefs about what other people think one should do (cf. [25]). They can motivate behavior due to expected approval by others. They can also be constraining because they prohibit certain behaviors. Previous research on the influence of injunctive social norms on meat avoidance, based on the theory of planned behavior [25], is inconclusive. While certain studies do find a correlation with vegetarianism [23] or fish consumption [20,21], other studies do not find an effect on meat [19,22] or fruit and vegetable intake [49]. A descriptive social norm is defined as beliefs about how other people actually behave in a certain situation [48]. These beliefs provide information about appropriate behavior and therefore function as a behavioral constraint. Evidence for an influence of descriptive norms on meat avoidance is scarce. Zur and Klöckner [24] found an effect of a descriptive norm on moral beliefs about meat production. Furthermore, some studies show that meat consumption [27] and the consumption of meat substitutes [30] are correlated with the number of vegetarians in an individual's personal network. However, Richardson et al. [26] did not find this association.

Vegetarian self-identity: In general, self-identity refers to salient aspects of an individual's self-perception [19]. It includes the way people see themselves, the actual self, and the way they want to be, the ideal self [50,51]. Consumption plays a major role in the construction and validation of personal identities [52–54]. This is also true for food consumption, since food is deeply entrenched with social, moral, and political meaning. Meat avoidance might therefore be an important aspect of a person's self-identity [19,55]. Correspondingly, Rosenfeld and Burrow [56] pointed out the intricate relationships among social context, internalization of a positive self-image connecting motivations and norms, and the behavioral enactment of an identity. According to these authors, a vegetarian identity encompasses all three components and represents "a multidimensional framework that captures one's thoughts, feelings, and behaviors regarding being a vegetarian" [32]. RCT shares the conviction that self-identity is bound up with social context and emotions [47]. However, consistent with social-psychological research on ethical consumption [23,57,58], RCT treats self-identity as an additional motivation and constraint of human behavior, analytically distinct from other benefits, constraints, social norms, and actual behavior [59]. Individuals experience gratification if they make a choice consistent with their self-identity. In contrast, they experience discomfort if they choose an option which threatens their self-identity. Such a conception is in line with Fox and Ward [60], who argued that a vegetarian diet can become an end in itself, irrespective of associated ethical, environmental, or health-related benefits. Theoretically, this does not preclude the possibility that the vegetarian self-identity may evolve over time from strong beliefs in particular benefits, social pressure [61], or past behavior [62], and is conditional on the perceived capability to perform a behavior due to favorable constraints [32]. Hence, benefits, constraints, and social norms can be closely connected to a vegetarian self-identity. Whether benefits, constraints, and social norms have an independent effect on diet choice or whether they are antecedents of the vegetarian self-identity is ultimately an empirical question.

Quantitative empirical research on self-identity and meat avoidance is scarce. Studies have found that an environmental self-identity [31] is related to meat intake while no effect has been found for an identity as a "healthy eater" [23]. Furthermore, Rosenfeld and Burrow [32] showed that the personal diet is more central to self-image for vegetarians than for omnivores. However, as Povey et al. [23] pointed out, the correlation between self-identity and behavior should be stronger if the behavior constituting the self-identity corresponds with the behavior under investigation (cf. [25]). In line with this, Carfora et al. [19] found self-identity as a "meat-eater" had a strong effect on meat intake. This finding has limited relevance for the analysis of meat avoidance, however, since they explicitly

excluded vegetarians from the sample. In contrast, we analyzed a specific type of self-identity which might be especially relevant for meat avoidance: a vegetarian self-identity (cf. [23]).

In sum, the RCT model proposed here considers the following as possible explanatory factors for the decision to reduce meat consumption: (i) ethical benefits in terms of animal welfare, environmental benefits, and health-related benefits; (ii) taste, convenience, and pecuniary costs as specific constraints; (iii) injunctive as well as descriptive social norms; and (iv) a vegetarian self-identity. Based on this broad theoretical approach, we could specify more clearly which of the aforementioned motivations and constraints are of higher or lesser relevance for the explanation of meat avoidance in the young and educated population we study. We thus formulated the following research question (RQ):

> **RQ:** Considering particular benefits, specific constraints, social norms, and a vegetarian self-identity, which are the most important motivations and constraints relating to meat avoidance among young and educated adults?

3. Materials and Methods

For the empirical analysis of this research question, we used data from a standardized online-survey conducted with students at the university of Zurich, Switzerland. Meat consumption is lower in Switzerland than in other developed countries but it is still high ([17]; see above). Furthermore, other sustainable consumption practices, such as organic or fair trade consumption, are quite widespread (cf. [63]). Thus, we are looking at a population where ethical, environmental and health-related benefits could be especially relevant for diet choice. This case therefore provides a rather conservative test of the argument that constraints are important to explain meat avoidance.

Focusing on students in a study on meat avoidance has several benefits. First of all, this young and educated population segment is an especially interesting group for analyzing motives and constraints relating to meat avoidance. It represents a population that is willing to reduce meat intake. Young educated people represent a trend-setting consumer group. The question thus arises as to what specific conditions bring them to reduce meat intake. Identifying these conditions can be helpful to increase meat avoidance in other segments. Secondly, surveying students has the advantage of reaching more persons who pursue a plant-based or a vegetarian diet, since meat intake is negatively correlated with education and age (e.g., [64,65]). This enables us to empirically study the determinants of the reduction in meat consumption in a reasonable way. In contrast, studies of the general population (e.g., [43]) or with convenience samples (e.g., [23]) only have a small number of vegetarians in their dataset and thus only limited variance in the dependent variable. Therefore, it is preferable to use a simple random sample of a population in which vegetarians are comparatively widespread. Thirdly, educated people in their 20s and 30s make up a substantial proportion of the population in big cities. In Zurich, 40% of the population holds a degree from a higher education institution [66]. In some districts, 80% of the households include at least one person with a university degree [67]. People aged 20–39 make up nearly 40% of the citizens in Zurich [66]. Hence, findings based on young educated adults can be representative for a substantial and potentially growing proportion of the inhabitants of certain areas [66], even if they are not generalizable for the whole adult population.

An email with a link to the survey was sent to 6000 randomly chosen students at the university of Zurich, Switzerland. Data collection took place in November and December 2016. The survey was framed as a poll on nutrition and lifestyle. There were no references to meat consumption or vegetarianism to avoid self-selection of meat-avoiders or vegetarians. We incentivized participation with a prize draw to win a gift certificate. The questionnaire was in German. In total, 827 individuals participated in the study, which corresponds to a response rate of 14%. Taking into account the generally lower response rates of online surveys [68], we consider this to be acceptable.

A basic problem for measuring meat avoidance is the lack of a consistent definition for specific dietary patterns [37,65]. This is especially true for everyday understandings (cf. [39,69]). The methodological implications of this are twofold. Firstly, dietary patterns, such as vegetarianism or plant-based diets, are more reliably measured by consumption frequencies of certain foods than by

self-descriptions such as "do you follow a vegetarian diet?" [30]. Secondly, vegetarianism, plant-based diets, and meat-based diets are more adequately conceptualized as forming a continuum instead of categorical differences [1,28,39]. Therefore, our dependent variable was an index of two questions which measure the reported intention to consume meat (question 1) and fish (question 2) in the future, with seven-point scales, ranging from "everyday"(=1) to "never" (=7). Strict vegetarians represent the upper end of this continuum. Heavy meat-eaters represent the lower end. Plant-based diets are situated in between (cf. [1]). The higher is the score on this index, the stronger is the propensity to avoid meat consumption (which includes red meat, poultry, and fish). Internal reliability is good, with Cronbach's $\alpha = 0.77$.

Most of our independent variables were measured in terms of agreement with particular statements concerning a vegetarian diet, each on a seven-point scale. The questions' wording, together with descriptive statistics, can be found in Table 1. As pointed out earlier, individuals do not necessarily equate vegetarianism with the complete renouncement of meat and fish. Rather, they also associate less strict diets with this description (i.e., eating meat only on special occasions or eating no red meat but fish; [1,28,39]). Thus, the everyday understanding of the term "vegetarianism", used to measure the independent variables, corresponds well with our operationalization of the dependent variable as a propensity for meat reduction [21,25].

Table 1. Questionnaire wording and descriptive statistics of variables.

	Item	Mean	Standard Deviation	Percent Missing
Benefits				
Ethical	A vegetarian diet reduces the suffering of animals	4.8	1.87	4%
Environmental	A vegetarian diet reduces environmental pollution	5.0	1.87	7%
Health-related	A vegetarian diet is healthy	4.2	1.68	5%
Constraints				
Taste	A vegetarian diet is tasty [reverse-coding]	2.8	1.83	4%
Pecuniary costs	A vegetarian diet is not more costly than a diet with meat [reverse-coding]	2.7	1.90	10%
Convenience (item 1)	A vegetarian diet does not demand great effort in everyday life [reverse-coding]	3.6	1.94	7%
Convenience (item 2)	A vegetarian diet does not restrict my freedom of choice [reverse-coding]	4.3	1.98	7%
Social norms				
Injunctive norm (item 1)	My friends do (would) approve if I follow (followed) a vegetarian diet	3.4	1.76	15%
Injunctive norm (item 2)	My family does (would) approve if I follow (followed) a vegetarian diet	3.1	1.75	11%
Injunctive norm (item 3)	My coworkers do (would) approve if I follow (followed) a vegetarian diet	3.3	1.68	27%
Descriptive norm	How many people in your social environment (friends, family, coworkers) do follow a vegetarian diet? Please provide an estimate (in numbers)	4.6	3.92	3%
Vegetarian self-identity				
Self-identity (item 1)	I think a vegetarian diet is desirable	3.9	2.07	9%
Self-identity (item 2)	A vegetarian diet fits well with who I am	3.8	2.10	14%

Each benefit—ethical, environmental, and health-related—was measured with a single question (see Table 1). Constraints in terms of taste and pecuniary costs were also both measured with a single question. Convenience is measured with two items. One item concerns the perceived effort to pursue a vegetarian diet. The other item measures the belief that a vegetarian diet restricts freedom of choice. We combined these items by computing their mean. Internal reliability is good, with Cronbach's $\alpha = 0.75$. The higher are the values of these variables, the stronger are the perceived constraints. For the injunctive norm, we computed the mean of three beliefs about the normative expectations of friends, family, and coworkers [25]. Internal reliability is very good, with Cronbach's $\alpha = 0.92$. Higher values indicate stronger perceived expectations to pursue a vegetarian diet. For the descriptive norm,

we used an open-ended question format and asked respondents to give an estimate of the number of vegetarians in their network (cf. [24]). More vegetarians in the network indicates a stronger descriptive norm for a vegetarian diet. For data cleaning purposes, we eliminated responses with an implausibly large number of vegetarians in the network (more than 20 people, 1.3% of the cases). It needs to be noted that the substantial conclusions are robust in regard to the exclusion of these values. Finally, according to the theoretical discussion above, the vegetarian self-identity encompasses, on the one hand, the way people see themselves (actual self), and, on the other hand, the way they want to be (ideal self). We therefore used two items to operationalize the vegetarian self-identity. These are based on previous measures of self-identity in behavioral research [58,70]. The first item relates to the actual self and measures the extent to which people think that a vegetarian diet fits with what kind of person they are [31]. The second item relates to the ideal self and measures the extent to which respondents consider a vegetarian diet to be an important goal [51]. These two items form a highly reliable scale, with Cronbach's α of 0.85. Finally, we include several socio-demographic variables. These are gender (0 = female, 1 = male), age (centered on its mean), age^2 and size of the respondent's municipality (0 = up to 10,000 inhabitants; 1 = more than 10,000 inhabitants).

It might be that some respondents do not have well-formed attitudes concerning a vegetarian diet. These respondents would be likely to choose answers at random, causing measurement error. To avoid biased measurements due to non-attitude, respondents had the option of choosing a "no opinion" category. Consequently, the dataset contains missing values, which we handled with multiple imputation (MI). MI generates multiple copies of the dataset, each containing estimates for the missing values. The estimated values vary between each dataset due to a stochastic element during the imputation process. The analysis model is then computed for each dataset and results are combined. Thus, MI allows inclusion of incomplete cases in the analysis while taking the uncertainty of estimating missing values into account. Methodologists regard MI as a "state of the art" method which leads to more accurate results than older techniques for handling missing data, such as listwise deletion [71]. Allowing item non-response and applying MI is thus preferable to forcing respondents to choose a response category, which would result in biased measurements due to non-attitude. We took the highest percentage of missing values as a guideline for the number of imputations, which is 27 (see Table 1). For the imputation, we included all the variables previously described as well as nine auxiliary variables related to the perception of vegetarians, political attitudes, and frequencies of different types of sustainable behavior. Indices were computed after imputation. To check the validity of the procedure, we inspected the distributions of the variables in each imputed dataset. No anomalies were detected. All computations were performed in STATA 13.

Looking at the composition of the sample, we found a clear overrepresentation of women. Seventy-one percent of the respondents are female in contrast to 57% of the students at the university of Zurich [66]. This might be due to the topic of the survey. Women are, on average, more interested in the topic of nutrition (cf. [11]). There is no reason to assume a response bias in terms of age (mean age = 24 years). As expected, vegetarian and plant-based diets are comparatively widespread in the sample. Fourteen percent of our respondents are strict vegetarians, completely renouncing meat. This is higher than the estimate for the general population, which is around 8% [12], clearly indicating the advantages of using a student sample to study meat avoidance. In contrast, just 47% of the respondents can be classified as heavy meat-eaters. They consume meat several times a week or daily. This is less than in the general Swiss population, where 69% consume meat at least three days per week [12]. Between these two extremes are the plant-based diets. Occasional meat-eaters who consume meat about once per week make up 25% of the respondents. Consumers who eat meat, but do so several times a month or less, represent 13% of the sample. The mean of the index of meat avoidance is 3.9, which loosely corresponds to several times a month. We therefore find substantial variation in our dependent measure for meat avoidance, which enables us to seriously study the determinants of reduced meat consumption.

Since our dependent variable has a metric scale, we computed OLS regressions. We employed a hierarchical modeling strategy and started with a model that only contains the socio-demographic variables (Model 1), then added the benefits (Model 2), then the constraints (Model 3), then the social norms (Model 4), and finally the vegetarian self-identity (Model 5). This allowed us to assess whether the ethical, environmental, and health-related benefits become less relevant for the explanation of meat avoidance once we take specific constraints, norms, or self-identity into account.

4. Results

The first regression model contains the socio-demographic variables only (Model 1, Table 2). Gender significantly covariates with the propensity to avoid meat. Women intend, on average, to consume less meat than men. In light of the current theoretical model, it is interesting to further investigate why this is the case. Can the difference between men and women be explained by specific motivations and constraints concerning the decision to avoid meat (for a similar argument see [49])? We will hence pay attention to changes in the gender effect when we introduce the remaining explanatory variables. Apart from gender, neither age nor size of the respondent's municipality is a significant predictor of meat avoidance. The socio-demographic variables explain around 1% of the variance in the dependent variable.

Table 2. OLS regressions with index of intended meat consumption frequency as a dependent variable. Standardized coefficients. Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

	Model 1	Model 2	Model 3	Model 4	Model 5
Ethical benefits		0.10 **	0.10 **	0.07 *	0.03
		(0.033)	(0.031)	(0.030)	(0.029)
Environmental benefits		0.21 ***	0.15 ***	0.12 **	0.05
		(0.033)	(0.031)	(0.030)	(0.030)
Health benefits		0.35 ***	0.18 ***	0.14 ***	0.05
		(0.035)	(0.036)	(0.036)	(0.036)
Taste			−0.13 ***	−0.11 **	−0.02
			(0.032)	(0.032)	(0.032)
Pecuniary costs			−0.05	−0.04	−0.03
			(0.026)	(0.026)	(0.025)
Convenience			−0.30 ***	−0.26 ***	−0.22 ***
			(0.033)	(0.033)	(0.032)
Injunctive norm				0.17 ***	0.10 **
				(0.037)	(0.037)
Descriptive norm				0.06 *	0.06 *
				(0.012)	(0.011)
Vegetarian self-identity					0.37 ***
					(0.038)
Gender	0.12 **	0.07 *	−0.01	0.01	0.01
	(0.133)	(0.112)	(0.109)	(0.108)	(0.104)
Age	−0.01	−0.05	−0.05	−0.04	−0.04
	(0.020)	(0.017)	(0.016)	(0.015)	(0.015)
Age^2	0.00	0.06	0.05	0.05	0.05
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Size of municipality	0.04	−0.01	−0.02	−0.02	−0.03
	(0.124)	(0.103)	(0.095)	(0.094)	(0.091)
Adj. R-square	0.01	0.30	0.41	0.43	0.48

In Model 2, we added the motivations for meat avoidance based on specific benefits of a vegetarian diet. All benefits are significant covariates. The stronger are the beliefs in these benefits, the stronger is the intention to avoid meat. However, if we examine the standardized coefficients, a clear order emerges. Health-related benefits are most strongly correlated with meat avoidance, followed by the environmental benefits. Ethical benefits in terms of animal welfare show a rather weak partial

correlation. Additional tests confirm that all of these coefficients are statistically different from one another (at the 10% level or less). In total, explained variance increases drastically in contrast to the first model with an adjusted R^2 of 30%, thus indicating the important roles of motivations for reduced meat consumption.

Furthermore, we found that the beliefs in specific benefits are not sufficient to explain the gender difference in meat avoidance. Although the coefficient is around half the size as in Model 1, it is still significant. Additional models (not shown) for each of these benefits separately indicate that the reduction of the gender effect is strongest for the health-related benefits. In terms of motivations, a gender-specific difference in the perception of the healthiness of a vegetarian diet is therefore most relevant for explaining the gender gap. Nevertheless, stronger beliefs in health-related, environmental, and ethical benefits on the part of women are not the only reason for their higher propensity to avoid meat.

Model 3 extends the analysis by three specific constraints, namely convenience, taste, and pecuniary costs. Convenience yields a very strong and highly significant effect on intended meat consumption. The stronger is the perceived effort for a vegetarian diet and the more severe is the perceived limits on freedom of choice, the lower is the intention to avoid meat. Taste represents another significant constraint. The weaker is the belief in the tastiness of a vegetarian diet, the lower is the intention of meat avoidance. However, the standardized regression coefficient for taste is considerably smaller than and significantly different ($p < 0.01$) from the coefficient for convenience. Finally, the belief about the pecuniary costs of a vegetarian diet does not show a statistically significant relationship with our dependent measure, although the coefficient displays the expected negative sign.

Returning to the motivations for meat avoidance, we found that the effects for health-related benefits and environmental benefits are substantially reduced in Model 3 in comparison to Model 2. To quantify this reduction, we computed the relative change of coefficients by taking the difference between the unstandardized coefficients of Model 2 and Model 3, divided by the unstandardized coefficient of Model 2. The coefficient for the environment shrinks by 30% and the coefficient for health by 49% in Model 3 compared to Model 2. The partial correlation with ethical benefits is quite robust in contrast. The relative change of the unstandardized coefficient is just 8% for ethics. Thus, convenience and taste are important constraints shaping the possibilities of pursuing the health-related and environmental benefits of a vegetarian diet. However, even when we take into account these constraints, all types of benefits are still significant. Together, motivations and specific constraints explain a very substantial amount of the variance ($R^2_{adj} = 0.41$).

Lastly, we found that, once we included the specific constraints, the gender-coefficient becomes insignificant. Additional models (not shown) for each of these constraints separately indicate that the reduction of the gender-effect is strongest for convenience. A gender-specific difference in the subjectively perceived convenience of a vegetarian diet is therefore the most relevant constraint for explaining the gender gap. Specific benefits together with specific constraints, especially health-related benefits and convenience, are sufficient to explain the gender difference in meat avoidance.

Looking at the results of Model 4, where we included measures of social norms, we see that the injunctive norm has a strong and highly significant effect on the dependent variable. Beliefs about the normative expectations by others (friends, family, and colleagues) strongly motivate and constrain the intention to avoid meat. The descriptive norm is also a significant covariate. The more vegetarians in the respondent's network, the higher the intention to avoid meat. However, the effect of the descriptive norm is weak.

The introduction of social norms leads to a substantial decrease in the effect sizes of all types of benefits. Again, we computed the relative change of coefficients by taking the difference between the unstandardized coefficients of Model 3 and Model 4, divided by the unstandardized coefficient of Model 3. Here, the relative changes of the unstandardized coefficients are 26% for ethics, 20% for the environment, and 24% for health. Most interestingly, in contrast to the introduction of specific constraints in Model 3, taking social norms into account does not only reduce the coefficients for the

environment and health but as well the coefficient for the ethical benefits. Indeed, social norms lead to a substantially stronger reduction of the effect of the ethical benefits than was the case with the specific constraints in the previous model (which was just 8%). Therefore, social norms seem more relevant than specific constraints for an explanation as to why people do not act on their moral beliefs. In contrast to the introduction of the specific constraints, ethical benefits lose a substantial amount of their initial influence once we take social norms into account. Nevertheless, even after controlling for social norms, all specific motivations remain significant. Specific benefits, specific constraints, and social norms seem to jointly shape dietary choices. Together, they explain 43% of the variance in the propensity for meat avoidance, which is only a minor increase from Model 3. Looking at the standardized coefficients, we found that convenience is the strongest covariate, followed by the injunctive norm, the health-related benefits, environmental benefits, taste as a constraint, ethical benefits, and the descriptive norm (statistical tests show that most of these coefficients are statistically different from one another at the 10% level, with the exceptions of health-related benefits vs. the injunctive norm, ethical benefits vs. the descriptive norm, and all the differences between the benefits). Pecuniary costs remain insignificant.

However, when we add vegetarian self-identity to the model, the picture changes strikingly (Model 5). First, we found a very substantial partial correlation between this type of self-identity and the intention to avoid meat. People who consider a vegetarian diet to be an important goal that fits with the kind of person they are plan to consume less meat in the future. In contrast, if the actual and ideal self are in conflict with a vegetarian diet, the propensity to avoid meat becomes substantially weaker. More importantly, the introduction of vegetarian self-identity drastically reduces the size of the coefficients for the benefits of a vegetarian diet. The relative changes of the unstandardized coefficients (taking the difference between the unstandardized coefficients of Model 5 and Model 4, divided by the coefficient of Model 4) are 59% for ethics, 60% for the environment, and 63% for health. Indeed, these coefficients become insignificant in the final model. The same is true for taste as a constraint. However, this does not mean that other motivations and constraints are irrelevant. Convenience, the injunctive norm, and the descriptive norm are all significant covariates in the final model. These beliefs constrain the possibilities of pursuing a vegetarian self-identity. Looking at the standardized coefficients, we found that a vegetarian self-identity is the strongest covariate, followed by convenience, the injunctive norm, and the descriptive norm (all of these coefficients are statistically different from one another at the 5% level). Together, they explain 48% of the variance in the intention to avoid meat.

5. Discussion

Our results show that a vegetarian self-identity is an especially important motivation for meat avoidance among young and educated consumers (cf. [19,31]). Indeed, once self-identity is taken into account, the benefits of meat avoidance and taste as a constraint are no longer significantly related to meat avoidance. This result is in line with Fox and Ward's [60] argument that a vegetarian diet, once established, becomes an end in itself, which strongly motivates and constrains diet choice, irrespective of the beliefs in the ethical, environmental, and health-related benefits, as well as the taste of the diet. However, this does not necessarily mean that the discussed benefits as well as taste as a specific constraint are irrelevant for the explanation of meat avoidance. These beliefs may be important for the adoption of a vegetarian self-identity and may still be contained in a vegetarian self-identity [32]. Additionally, injunctive social norms could influence the development of a vegetarian self-identity. Social actors internalize expectations by others, integrating them into their personal identity [32,61]. The statistical finding that the effects of these variables (benefits, taste, and injunctive norm) shrink when we control for vegetarian self-identity is consistent with this argument (see models 4 and 5, Table 2). Thus, self-identity mediates the effects of benefits, taste, and partially the injunctive norm. Once developed, however, vegetarian self-identity works as an end in itself and cancels out the specific

impetus for meat avoidance provided by ethical, environmental, and health-related benefits and taste perception. Instead, it works in a more holistic and automatic way [72].

Contrary to public belief and self-reports by vegetarians [39], ethical benefits play only a minor role in the explanation of meat avoidance in the population studied. This is even true if one examines the standardized effects of the benefits before controlling for constraints (see Model 2, Table 2). This finding might be explained by cognitive disassociation of meat from its animal origins. Experimental evidence shows, for example, that consumers feel less empathetic if meat is processed instead of unprocessed [73]. In everyday situations, the ethical benefits are thus less easily translated into diet choice in the first place, even before constraints come into play. In general, our results suggest that the more immediate the consequences of meat avoidance for the individual himself, the stronger the impact of the corresponding motivations and constraints. Thus, e.g., health-related benefits are more important than environmental benefits, and environmental benefits are more important than ethical benefits. Identity concerns and convenience, which directly relate to the individual himself, are further examples of this.

We found that specific constraints, especially convenience, are of vital importance to explain plant-based and vegetarian diets among students. The strong influence of convenience is in line with previous studies, which pointed out the important roles of availability [20,28], knowledge [37], and difficulty of food preparation [1] for meat intake and reduction. Taste has also been shown to be a strong predictor of meat avoidance in the majority of previous research (e.g., [21,26]). However, we found that convenience is a stronger covariate than taste, which is at odds with studies concluding that taste is the most important barrier to meat avoidance [1,45]. Indeed, only convenience remains a significant covariate of meat avoidance once self-identity is taken into account. This finding might be specific to the student population since younger consumers might lack cooking skills or pursue an active lifestyle, leaving less room for the preparation of meals. Hence, convenience might be an especially relevant concern for this group. Finally, pecuniary costs are not related to meat avoidance in any of the models. This type of economic constraint seems to be irrelevant for meat avoidance. A possible reason might be that the additional costs of quality vegetables and meat substitutes are simply not that high [38]. Alternatively, research has shown that ethical consumers are in general less price-sensitive [74].

Both types of social norms are significant covariates of meat avoidance, even when we introduce the vegetarian self-identity in the model. In line with previous literature (cf. [20,21,23]), injunctive norms predict plant-based and vegetarian diets. Indeed, the effect of injunctive norms on the intention to avoid meat is rather strong. From a theoretical perspective, this is a plausible finding, since food choices possess strong normative meaning and are very often easily observed by others, be it at a family meal, a dinner party with friends, or a cafeteria lunch. While these situations might be more common for students than the general population, many examples for analogous settings commonly encountered by other social groups exist, such as a business lunch, having a meal with work colleagues, or having dinner with close friends. We also found a significant effect of the descriptive norm on meat avoidance [24,27,30]. However, as the standardized regression coefficient indicates, the effect is rather weak. Descriptive norms therefore seem to be less relevant for meat avoidance. Why could this be the case? According to the theory, descriptive norms should guide dietary choices because they contain information about appropriate behavior in specific situations [48]. This information is especially relevant if the person feels uncertain about appropriate conduct. In contrast, if uncertainty is low, individuals do not need to rely on this information. The latter might be the case with meat consumption. In general, individuals might feel quite confident that both the meat and the vegetarian meal are legitimate choices. Thus, uncertainty surrounding diet choice is low and information on the behavior of others is less influential. Consequently, descriptive norms are less relevant for the intention to avoid meat.

The analysis sheds light on the reasons why consumers do not reduce their intake of meat despite the potential ethical, environmental, and health-related benefits. In general, we found that

the motivation to reduce meat based on the perceived benefits is hampered if consumers consider a vegetarian diet to be inconvenient, less tasty, or if there is social pressure to retain a meat-based diet. Interestingly, however, the ethical motivation is not so much restricted by convenience and taste as it is by social norms. Expectations by significant others are hence more relevant for explaining why consumers do not follow up on their ethical beliefs than convenience and taste. Still, convenience, taste, and injunctive and descriptive norms alone are not sufficient to explain why consumers do not pursue the benefits implied by meat reduction. It is only when vegetarian self-identity is taken into account that the effects of all benefits become insignificant. Thus, as pointed out above, self-identity cancels out the motivation to reduce meat consumption on the basis of perceived benefits because it becomes an end in itself [60]. Conversely, consumers without a strong vegetarian identity cannot be convinced to adopt a vegetarian or plant-based diet solely based on potential benefits. The development of a vegetarian self-identity is a crucial condition for meat avoidance.

In line with previous literature [28,39,43–45], our results show that the intention to avoid meat is greater for women than for men. A common explanation for this finding is that meat is strongly linked to gender roles, functioning as a symbolic resource to perform a male identity [72]. Our analysis shows that differences in motivations and constraints are sufficient to explain the gender gap. In this regard, health-related benefits and perceived convenience are most relevant to explain the higher rate of meat avoidance among women. Apart from gender, none of the socio-demographic variables were significantly related to the intention to avoid meat. Hence explained variance of the socio-demographic variables was very low. This is a recurrent finding in the literature on ethical consumption [75].

In sum, our results provide a differentiated picture of the motivations and constraints of a meat reduced diet in the case of younger and more educated consumers. In this group, the intention to avoid meat directly depends on a vegetarian self-identity, social norms, and convenience. These motivations and constraints are part of the reason for the comparatively high levels of meat avoidance in a trend-setting consumer segment.

6. Conclusions

6.1. Key Findings

Despite growing public awareness of the ethical, environmental, and health-related benefits of meat reduction and their relevance for a sustainable future, plant-based or vegetarian diets are still a rather rare occurrence in Western countries [15,17]. To explain this pattern, we argued on the grounds of wide rational choice theory that the decision to avoid meat must be understood as being simultaneously determined by specific motivations and constraints. To determine which motivations and constraints are important, in our study, we empirically tested a broad set of motivations and constraints discussed in the research literature. Our results show for the segment of young and educated adults that meat avoidance, operationalized by the intended frequency of meat consumption (including red meat, poultry, and fish), is linked to vegetarian self-identity, convenience, injunctive norms, and descriptive norms. Ethical, environmental, and health-related benefits as well as taste as a constraint do not show a significant association once we control for vegetarian self-identity. Thus, vegetarian self-identity mediates these types of ethical, environmental and health-related convictions. Furthermore, persons with a vegetarian self-identity do not miss the taste of meat. Pecuniary costs are not significantly correlated in any of the models. Overall, our RCT model of meat avoidance explains 48% of the variance in the dependent variable which is a very good result. In general, these results support theoretical accounts emphasizing self-identity as a prime motivation and constraint for diet and consumption choices [19,23,31,52–55,72]. However, in line with wide RCT, the analysis also makes clear that individuals pursue a vegetarian self-identity within the possibilities shaped by other constraints, namely convenience and social norms [1].

6.2. Limitations

We must note two important limitations to our study. Firstly, while the use of a student sample has the benefit of reaching more people pursuing a plant-based or a vegetarian diet, it might limit the generalizability of the findings, since we only studied a rather young and educated consumer segment. However, our focus was on exploring the most important motivations and constraints relating to a reduction in meat consumption and not on estimating the frequency of a particular category, such as a vegetarian diet. As long as education and age do not interact with the relationships specified in the model, the results should be generalizable. Previous research on the relationship between attitudes toward animal welfare and diet choice did not find such interaction effects [76]. Of course, this does not ignore the possibility that other interaction effects might occur. For example, younger people might be more prone to social influence in regard to vegetarianism than older consumers. Moreover, other omitted variables characteristic of the student population could influence the relationships we found. For example, students might consider the consistency between their beliefs and diet choice more systematically and explicitly (cf. [77]). Hence, some correlations between beliefs and behavior might be lower for other social groups. We therefore recommend replicating and extending the analysis with representative samples of the general population and to investigate in more detail whether education, age or another variable characterizing the student population (such as cognitive sophistication) moderate the correlations we found.

Secondly, our analysis is based on cross-sectional data. We can therefore only draw tentative conclusions on the causal directions and interrelationships between meat avoidance, motivations, constraints, social norms, and self-identity. For example, certain authors argue that a particular self-identity evolves in part from past behavior [62]. Accordingly, it is possible that not only does vegetarian self-identity influence the intention to avoid meat but that behavior also feeds back on identity. Alternatively, consumers might engage in meat consumption for health reasons but develop an ethical understanding of their diet choice over time, integrating it into their vegetarian self-identity (cf. [39]). The cross-sectional design of our study cannot disentangle these reciprocal effects and temporal processes. Hence, we encourage future research to test our findings with longitudinal data or experimental designs.

6.3. Future Research

The model investigated here explains a substantial amount of the variance in the intention to avoid meat. However, more than half of the variance remains unexplained. Based on the current analysis, we suggest three areas for improvement.

Firstly, since self-identity plays a major role, future research could investigate other types of identities, including their hierarchical ordering [51]. These may refer to gender [55,72], moral self-hood [78], or even "high-brow" lifestyles [79]. Additionally, research should investigate the theoretical and empirical relationship of self-identity to different motives of a reduction in meat consumption such as ethical and health benefits.

Secondly, the model included two types of social norms but did not address the role of a personal norm for diet choice. Previous research in ethical and political consumption found consistent evidence for the explanatory power of personal norms, even taking self-identity into account [57,58,63]. It could therefore be a valuable addition to the explanation of meat avoidance in future studies.

Thirdly, we found that subjectively perceived pecuniary costs of a vegetarian diet are uncorrelated with meat avoidance. However, this does not necessarily mean that all types of economic constraints are irrelevant. For example, perceived price of meat might be an important constraint, which leads to a pattern of reduced meat consumption especially among low-income persons [64]. Furthermore, market structures, including supply of meat-free meals, might be a vital part of the opportunity structure for meat avoidance, leading to a higher perception of convenience [63,80]. Such a focus would engender research on the structural and spatial organization of food provision in daily circumstances such as cafeterias, canteens, and restaurants.

6.4. Policy and Managerial Implications

Since a vegetarian self-identity, convenience, and social norms emerge as the primary determinants of the intention to avoid meat, we suggest that policy-makers develop strategies to directly influence these beliefs.

Improving perceived convenience might be an especially efficient strategy, since it has a high impact on the intention to avoid meat while the costs for such interventions are comparatively low. In this regard, one should provide knowledge on how to prepare a diverse selection of plant-based and vegetarian meals. This knowledge could be presented in cookbooks for vegetarian meals, cooking shows with a focus on vegetarian cuisine, or mobile apps which give daily suggestions for easy-to-cook vegetarian dishes, together with a shopping list. Furthermore, food suppliers, retailers, canteens, and restaurant owners could try to improve the convenience of a vegetarian and plant-based diet by broadening the variety of vegetarian dishes they offer. This should be accompanied by an information campaign, since consumers need to be made aware of the new choices. Moreover, food suppliers or retailers should strengthen the marketing of ready-made vegetarian meals. It is important to take into account that such meals are often perceived as less healthy, which deters consumers inclined to adopt a vegetarian diet (cf. [65]). Thus, special attention should be paid to the marketing of such products as a healthy and convenient alternative to meat-based meals.

In terms of injunctive norms, we recommend an information campaign in which significant others make moral appeals to reduce the consumption of meat or to pursue a vegetarian diet. For example, one might install portraits of students in a cafeteria together with a small passage of text presenting arguments for meat reduction, implying social approval of meat avoidance: "I think it's great that my friends eat less meat because it helps the environment". This approach might also be attractive to food suppliers and retailers seeking an effective marketing strategy for vegetarian products. In this case, local celebrities might provide suitable role models. Moreover, based on the finding that descriptive norms influence the intention to avoid meat, one might accompany the former strategy with (fictitious) information on the frequency of people choosing the meat-free alternative. Retailers or food-suppliers could organize an event with a well-placed sign that reads: "the majority of our consumers chooses the meat-free product" [81].

Finally, the results showed that the vegetarian self-identity is an especially strong determinant of diet choice. This implies, firstly, that food manufacturers, marketers, and retailers should build brands that resonate with a vegetarian self-identity. Such a marketing strategy consists in addressing the identity of the consumer directly, for example "for us, vegetarianism is an important part of who we are. Are you the same?" This leads to strong brand identification and consumer loyalty [82]. Secondly, in the long run, it would be very effective to promote vegetarian identities. To accomplish this, it is best to refer to benefits and constraints which have direct consequences for the individual himself, such as health, taste, and injunctive norms. Information strategies targeting these beliefs should result in the development of a vegetarian identity over time [61]. In the short term, however, to decrease the consumption of meat by people with a weak or no vegetarian self-identity, it is advisable to develop tailored communications demonstrating the consistency between these identities and meat avoidance. Marketers and policy makers should try to attenuate the link between diet choice and identity for this consumer segment, e.g., "it is not important what you eat, it is important who you are". They should also refer to extrinsic benefits of a vegetarian diet, such as the potential for saving money by buying less meat or social approval by reputable social actors.

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